Silicone elastomers with superior softness and dielectric properties

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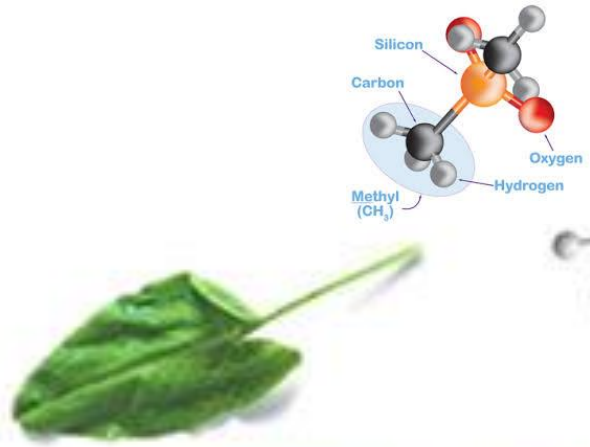
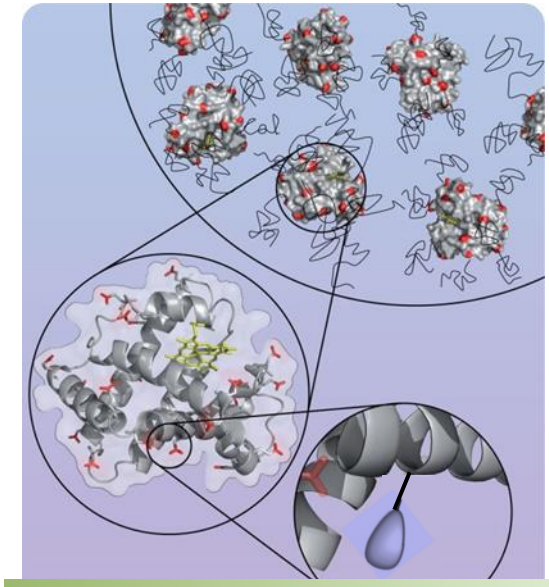
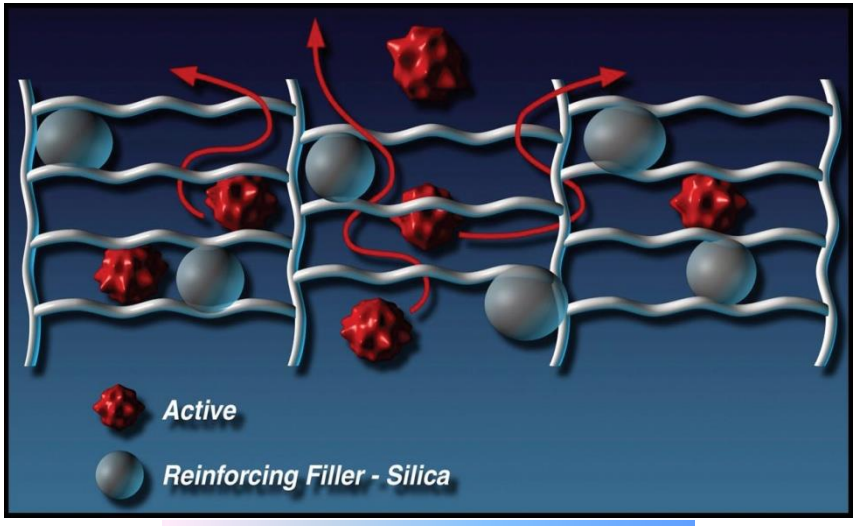


ORGANIC **Silicone** INORGANIC



chemical modification



physical blending

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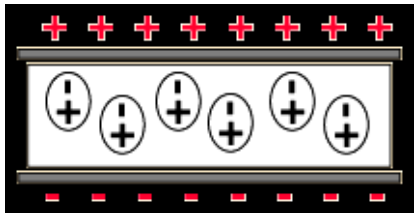
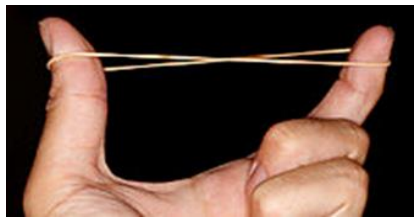
$$s = \frac{\varepsilon_r \varepsilon_0}{Y}\left(\frac{U}{d}\right)^2$$

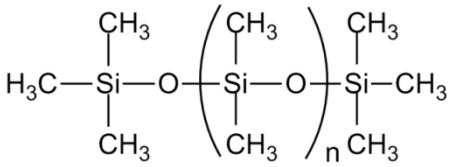


$\varepsilon_r \Uparrow$



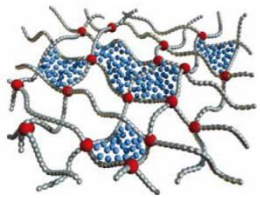
$Y \Downarrow$

DMS-T22 (silicone-oil)



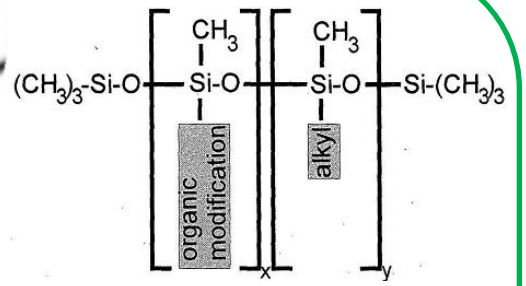
physical blending

LMS-152 (chloro-oil)

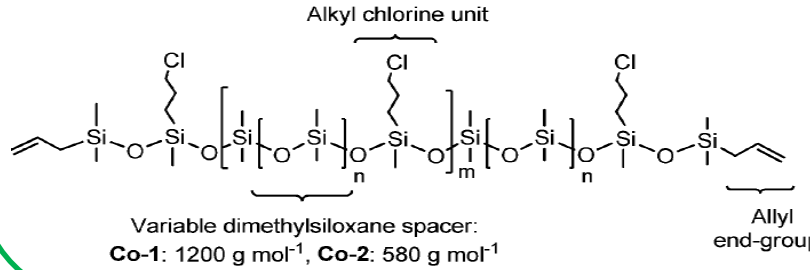


$Cl{-}CH_2CH_2CH_2Si{\equiv}$

chemical modification



Chloropropyl-functional copolymer



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Composition	Thickness (µm)	Breakdown (V/µm)	Young's modulus @ 5% strain (MPa)	Tensile strength (MPa)	Strain @ break (%)
	49	170	2.41	5.23	717
	80	66	0.15	0.65	429
		69	0.52	1.27	314
			1.90	6.51	596
			2.00	5.06	314
				1.06	254
				1.71	256
					481

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No	Composition	Breakdown (V/µm)	Strain (%)					
#0	LR3043/50	170	2.41					
#3	LR3043/50 + 30 phr Co-1	122	1.90	4.90				
#4	LR3043/50 + 30 phr Co-2	113	2.00	8.06	4.58			
#7	LR3043/50 + 30 phr LMS-152	120	1.73	4.43	4.38	1.14		
#9	LR3043/50 + 30 phr DMS-T22	98	0.87	3.01	2.99	1.03	1.02	